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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,890	02/08/2002	Takeyuki Suzuki	04208.0136	8020

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Washington, DC 20005-3315

EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No. 10/067,890	Applicant(s) SUZUKI ET AL.	
	Examiner Anita K Alanko	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/19/03 amdt, sub spec.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 06-287570.

JP 06-287570 discloses a method for forming a recognition mark comprising:

forming wiring patterns ("circuit pattern" paragraph [0015]) on the front surface 7;

forming a conductive pattern as a recognition mark 8, 9 on the front surface (Fig.2);

and

forming a through hole 5, 6 from a back surface toward said conductive pattern

(paragraph [0015]).

As to claim 2, JP 06-287570 discloses to form a metal bump 4 on the back surface (Fig.1; paragraph [0016]).

As to claims 3-4, the conductive pattern has a particular shape (a cross-shape, Fig.3) and the shape of the through-hole (circular) defines the recognition mark.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-287,570 in view of JP 07-211,750.

The discussion of JP 06-287570 from above is repeated here.

As to claim 7, JP 06-287,570 does not disclose to form the conductive pattern at the same time as forming the wiring patterns. JP 07-211,750 teaches that it is useful to form a conductive pattern (recognition mark c, Fig.6, paragraph [0003]) at the same time as forming a wiring patterns (inner leads b).

It would have been obvious to one with ordinary skill in the art to form a conductive pattern at the same time as forming a wiring patterns in the method of JP 06-287570 because JP 07-211,750 teaches that this is a useful technique for forming recognition marks and wiring pattern and it would save time to perform them simultaneously rather than separately.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest a method for forming a recognition mark on a substrate for a bare chip carrier of a KGD wherein a shape of said through hole defines the recognition mark and said through hole is filled with a plating material until the end of said plating lies flush with said surface where said wiring pattern is not formed, as in the context of claim 5.

The closest prior art, JP 08-125,396, discloses to form recognition marks and through-holes, however the bump is formed elsewhere on the substrate (see Figure 1) and not in the through-hole which is aligned with the recognition mark. There is no motivation to provide plating material in the through hole whose shape defines the recognition mark, as in the context of claim 5, in the method of JP 08-125,396.

Response to Amendment

The substitute specification is accepted. The objection to the drawings, the 35 USC 112 and 103 rejections over admitted prior art are withdrawn. Applicant's point is well taken that Nagano does not suggest to form a through hole from a back surface of a substrate toward the conductive pattern. The through hole is on a middle layer, and no machining is performed through the substrate.

However, claims 1-4 and 6-7 are rejected over newly cited JP 06-287,570 as discussed above in the rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 11-4082 is cited to show forming through-hole 5 toward conductive pattern 3. JP 05-267,802 A is cited to show different patterns for marks (Fig.3). JP 10-65291 is cited to show forming marks on a front surface of a substrate.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon, Tues & Fri: 8:30 am-5 pm; Wed & Thurs: 10 am-2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765